

Draft State Route 28

Transportation Concept Report

California Department of Transportation, District 3
Office of Advance and System Planning
Karen Peneschi, Chief
(916) 274-0634

Report Prepared by

Nicholas Deal
Associate Transportation Planner
(530) 741-5151

Traffic Data
Office of Travel Forecasting and Modeling
Dennis Azevedo, Chief
(530) 741-5130

July 2004

APPROVED BY:

JODY E. LONERGAN
District Director
District 3, Marysville

DATE

APPROVAL RECOMMENDED:

WAYNE A. LEWIS
Deputy District Director, Planning and Local Assistance

DATE

Table of Contents

INTRODUCTION TO THE TRANSPORTATION CONCEPT REPORT.....	1
WHAT IS A TRANSPORTATION CONCEPT REPORT?	1
ROUTE CONCEPT DEVELOPMENT	2
Concept Level of Service	2
Concept Facility	2
Concept Improvements	2
MAP 1 – STATE ROUTE 28 LOCATION MAP.....	3
MAP 2 – STATE ROUTE 28 SEGMENT MAP	4
TRANSPORTATION CONCEPT REPORT SUMMARY	5
TABLE 1 – CONCEPT SUMMARY	5
CONCEPT RATIONALE	6
SEGMENT SUMMARY	6
SEGMENT 1 FACT SHEET	8
SEGMENT 2 FACT SHEET	15
SEGMENT 3 FACT SHEET	23
APPENDIX A: CURRENT DESIGN STANDARDS.....	30
APPENDIX B: LEVEL OF SERVICE DEFINITIONS	31
CALIFORNIA NATURAL DIVERSITIES DATABASE.....	32
TABLE 2 – SR 28 SPECIAL STATUS SPECIES (COMMON NAMES)	32
APPENDIX C: CALIFORNIA NATURAL DIVERSITIES DATABASE MAP	33
APPENDIX D: FEDERAL & STATE ENVIRONMENTAL AND RESOURCE AGENCIES	34
APPENDIX E: GLOSSARY AND ACRONYMS.....	35
APPENDIX F: REFERENCES.....	39

Introduction to the Transportation Concept Report

What is a Transportation Concept Report?

A Transportation Concept Report (TCR) is a long-term planning document that each Caltrans District prepares for every State highway, or portion thereof, in its jurisdiction, and is where long-range corridor planning in Caltrans usually begins. The purpose of a TCR is to determine how a highway will be developed and managed so that it delivers the targeted level of service and quality of operations that are feasible to attain over a twenty-year period. These are indicated in the Route Concept. (See below for a discussion of how Route Concepts are developed.)

In addition to the 20-year Route Concept, the TCR includes an Ultimate Concept, which is the ultimate goal for the route beyond the twenty-year planning horizon. Ultimate Concepts must be used cautiously, however, because unforeseen changes in land use and other variables make forecasting beyond twenty years difficult.

How does the TCR fit in with local and regional planning efforts?

As owner/operator of the State highway system, Caltrans has a duty to establish a long-range vision for its highways and determine overall strategies for their management. This is achieved by taking into consideration the numerous factors encompassed in the human and natural environments in which a particular route exists. During development of a TCR every effort is made to arrive at the same or similar level of service standard used by a local jurisdiction. Caltrans' objective is to have local, regional, private sector, and State consensus on corridor Concepts, planning strategies, and improvement priorities.

Whenever a General Plan is updated, State highways within the jurisdiction should be recognized and included in the circulation system. The jurisdiction should also adopt the Concept Level of Service (LOS) standard indicated in the TCR, along with the Concept Improvements described in the TCR as necessary to meet the Concept LOS. The jurisdiction has the option of adopting a higher LOS standard and acknowledging the inconsistency with the TCR and the associated funding participation limitations by the State for State highway improvements.

Does the TCR have to be read from cover to cover in order to get pertinent information about a route segment?

Caltrans does not intend for TCRs to be read from cover to cover as one would read a book. Rather, the TCR is a reference document with segment-specific information presented in a concise and readable format that allows the user to easily access -- in one place in the document -- all the data and information that pertains to a particular segment of the route. Because of this format, there is a certain amount of repetition in the TCR, as information pertaining to adjacent segments of the route is repeated in the relevant sections of the TCR.

The TCR first presents an overview of the route's current condition, the general context in which it exists, and Caltrans' general vision for its future. The route is then divided into segments for analysis. Each segment's Fact Sheet contains a variety of technical, statistical, historical, and other useful information that provide a deeper understanding of the route and a context for the Concepts developed for it.

Transportation Concept Reports also include right-of-way widths, an inventory of biological resources known to exist in the vicinity of the highway, and maps showing the general location of rare species and natural communities. Right-of-way and environmental information provided in a TCR are relative to the route or route segment and are not to be considered project specific. Precise right-of-way needs cannot be defined until the appropriate environmental and engineering studies are completed. In the back of the TCR is a glossary of terms and acronyms, and a list of references used to prepare the report.

District 3 is continually striving to improve the quality and usefulness of its TCRs. Future updates will include expanded environmental information, the results of an operational analysis of heavily-congested route segments, and a corridor-level landscape or aesthetic master plan, if available, to help incorporate specific, context-sensitive features into highway projects.

Route Concept Development

A Transportation Concept Report (TCR) assesses a highway's current and future operating conditions and uses that and other information to establish a 20-year Route Concept for each segment of the route. A Route Concept is comprised of a Concept Level of Service and a description of the Concept Facility. The TCR then determines the nature and extent of improvements needed to attain the Route Concept.

Concept Level of Service

Concept Level of Service (LOS) reflects the minimum level or quality of operations that is appropriate for each route segment, and is considered to be reasonably attainable within the 20-year planning period. Caltrans also uses the Concept Level of Service as the CEQA level of significance threshold when evaluating the impacts of local development plans and projects. A significant impact is identified if a specific local development plan or project results in a level of service on the highway segment or intersection that is below the Concept LOS, and must be mitigated.

Typical Concept LOS standards in District 3 are LOS D in rural areas and LOS E in urban areas. However, some heavily-congested route segments now have a Concept LOS F because the improvements or travel demand reductions required to bring the level of service to E are not considered feasible. Level of service is established through travel forecasting data analysis, using regional models where available. (See the Glossary for a definition of Level of Service.)

Concept Facility

The description of a facility reflects its number of travel lanes, and degree of access onto the highway by local streets and driveways. (See the Glossary for an explanation of Access Control.) The Concept Facility will provide the amount of vehicle-carrying capacity necessary to achieve the Concept LOS. In some cases, people-carrying capacity will also be incorporated. Auxiliary lanes are not considered a part of the mainline roadway and, therefore, are not included in the number of travel lanes indicated in a Concept.

Concept Improvements

The range of improvements available to achieve a Route Concept is heavily influenced by environmental, political, and fiscal conditions. In many areas, planned projects are subject to meeting air quality conformity standards. Unanticipated safety projects and routine roadway maintenance are not included in Route Concept Improvements, although both will occur throughout the corridor as needed.

Because a highway is but one part of an interconnected transportation network, District 3 takes a corridor approach to developing TCRs. The corridor may include additional transportation systems, such as bus or rail transit service, bicycle and pedestrian facilities, heavy rail, a seaport, airports, interregional bus service, local roadways, and facilities for neighborhood electric vehicles used frequently by older citizens for local mobility. All of these systems reduce excess highway demand by providing travelers and shippers of goods with non-highway or non-driving options. Expansion of those that can provide a notable improvement to mobility within the corridor are included as Concept Improvements.

Where a Concept LOS is F, the TCR recommends general operational improvements and alternate modes of travel as starting places for further study. However, because the number of route segments with a Concept LOS F is expected to increase, operational (that is, non-capacity-increasing) improvements are now the primary strategy for optimizing the operation of the existing highway infrastructure. To fully integrate this strategy, future TCRs will include an operational analysis of heavily-congested urban route segments. The results of this analysis will determine which specific operational improvements will become Concept Improvements.

Map 1 – State Route 28 Location Map



Map 2 – Route Segment Map



SR 28 Transportation Concept Report Summary

Table 1 – Concept Summary

Segment County Description	Post KM	Post Mile	LOS			Existing Facility	20-Year Concept Facility	Ultimate Facility	Improvements Toward Concept Facility
			2003	2023 No Build	Concept				
1 Placer Jct. SR 89 to Estates Drive in Tahoe Vista	0.136/ 12.502	0.085/ 7.769	E	F	F	2C	2C	2C	<ul style="list-style-type: none"> Upgrade highway to Class II bike lane from SR 89 to Burton Creek State Park, and from Lakewood Lane to Estates Drive Construct continuous two-way left turn lanes at the following locations: <ul style="list-style-type: none"> Sierra Terrace Road (0.91) to PM 1.10 Old Mill Road (2.39) to Dollar Drive (PM 2.95) Agate Road (PM 7.03) to Granite Road (PM 7.19) Construct left turn lane westbound at Dollar Drive (PM 2.95) Construct left turn lanes at the following eastbound locations: <ul style="list-style-type: none"> Lardin Way (PM 4.25) Ridgewood Road (PM 4.85) Granite Road (PM 7.19) Stag Drive (PM 7.49) Estates Drive (PM 7.77) Construct scenic turnouts on Dollar Hill at PM 3.29 and PM 7.25
2 Placer Estates Drive to Chipmunk Street	12.502/ 16.439	7.769/ 10.215	E	F	F	4C	3-4C*	3-4C*	<ul style="list-style-type: none"> Upgrade highway to Class II bike lane from Estates Drive to Chipmunk Street Modify signal to include protected left turns at the SR 267/SR 28 intersection Install traffic signal at National Avenue *Reduce from 4 lanes to 3 lanes (if certain criteria are met – see text on Page 16)
3 Placer Chipmunk Street to Nevada State Line	16.439/ 17.747	10.215/ 11.028	F	F	F	2C	2C	2C	<ul style="list-style-type: none"> Upgrade highway to Class II bike lane from Chipmunk Street to Nevada State Line Install Changeable Message Sign (CMS) westbound at Harbor Avenue (PM 10.93)

Concept Rationale

State Route (SR) 28 extends 11.0 miles from SR 89 at Tahoe City to Kings Beach, where it intersects with SR 267, and continues to the California/Nevada border. SR 28 is a two to four lane conventional highway serving local and recreational traffic along the north shore of Lake Tahoe. SR 28 is also part of the 72-mile roadway that traverses around Lake Tahoe. This TCR divides SR 28 into three segments. Segments 1 and 3 are two-lane conventional highways, while Segment 2 is currently a four-lane conventional highway.

The Tahoe Regional Planning Agency (TRPA) is the responsible agency within the Tahoe Basin for transportation issues, and takes the lead role in identifying transportation strategies and projects. As a result, in order to preserve the unique character of the Basin, typically, TRPA does not pursue additional roadway capacity. Since Caltrans is not the responsible agency for programming capacity increasing projects in the Basin, we cannot guarantee that the overall facility will operate at any level of service better than LOS F. Therefore, our concept for SR 28 will remain LOS F.

Segment Summary

TCR segments may be delineated according to county boundaries, transitions between conventional highways, freeways, expressway, traffic volumes, and flow characteristics. This segment summary discusses the existing conditions and land uses that will impact mobility along the corridor.

Segment 1 (PLACER PM 0.085 - 7.769 / Km 0.136 - 12.502)

Segment 1 is a two-lane conventional highway beginning at the junction of SR 89 in Tahoe City, and ending at Estates Drive in Tahoe Vista. SR 28 is the main arterial through the communities of Tahoe City and Carnelian Bay.

SR 28 in Tahoe City (PM 0.085 / PM 0.680) consists of three travel lanes, one through lane in each direction, and a continuous center turn lane. Once outside of Tahoe City the highway narrows down to two lanes near the Tahoe State Recreation Area and Burton Creek State Park. However, from Lake Forest Road (PM 2.435) to Dollar Hill Drive (PM 2.620) there is a short section where the highway again becomes three lanes.

From Dollar Hill Drive east, SR 28 remains a two-lane highway to the community of Carnelian Bay. Beginning at Center Street (PM 5.745) SR 28 becomes three lanes until just past Onyx Street (PM 6.082). For the rest of Segment 1 the highway remains two lanes.

Segment 2 (PLACER PM 7.769 – 10.215 / Km 12.502 - 16.439)

Segment 2 is the main arterial through the communities of Tahoe Vista and Kings Beach. This section of SR 28 is a conventional four-lane highway with two through lanes in each direction, beginning at Estates Drive in Tahoe Vista, and ending at Chipmunk Street in Kings Beach.

Historically, Kings Beach has been one of the primary commercial and recreational centers in the Lake Tahoe Basin. Land use is predominantly tourist, recreational, and commercial. Setbacks from the right-of-way are very limited for this segment.

In Kings Beach traffic consists primarily of personal vehicles; only a small percentage of truck traffic exists (3%). Pedestrian traffic is heavy at times, especially during tourist season, and bicycle traffic is increasingly on the rise. Pedestrian paths include standard sections of sidewalk, as well as informal paths. Where parking is present, pedestrians are forced to walk on the road shoulder.

Segment 3 (PLACER PM 10.215 – 11.028 / Km 16.439 – 17.747)

Segment 3 is a conventional two-lane highway from Chipmunk Street to the Nevada State Line. Land use along this segment of the route is primarily residential.

Highway traffic in Segment 3 is a combination of vehicles traveling through the segment (through traffic) and vehicles having a destination within the segment (local traffic). Just past the Nevada state line are casinos, with hotel/motel and commercial uses, as well as single-family homes.

Pedestrian facilities in Segment 3 are few. Pedestrians share the same right-of-way as vehicles, including walking to the public beaches in Kings Beach and the casinos across the state line.

District 3 - Transportation Concept Report Fact Sheet

Route Information

Route: 28
County: Placer
Segment Number: 1

Segment Boundaries

KP Start	0.137	PM Start	0.085
KP End	12.392	PM End	7.700
Distance [km]	12.255	Distance [mi]:	7.615

Segment Description

Junction SR 89 to Estates Drive

Concept Summary

Existing Facility:

2-lane conventional highway

Concept Facility:

2-lane conventional highway

Ultimate Facility:

2-lane conventional highway



Level of Service (LOS)

Existing LOS:	E	County General Plan:	Placer
20 yr. LOS - No Build:	F	General Plan Year:	1994
20 yr. Concept LOS:	F	General Plan LOS Standard:	D

Main Street Communities

Community Name:	General Plan Year:	General Plan LOS Standard:
Tahoe City		
-Unincorporated - Refer to county general plan for LOS standard		

TRANSPORTATION CONCEPT IMPROVEMENTS

Upgrade highway to Class II bike lane from SR 89 to Burton Creek State Park, and from Lakewood Lane to Estates Drive

Construct continuous two-way left turn lanes at the following locations:

- Sierra Terrace Road (0.91) to PM 1.10
- Old Mill Road (2.39) to Dollar Drive (PM 2.95)
- Agate Road (PM 7.03) to Granite Road (PM 7.19)

Construct left turn lane westbound at Dollar Drive (PM 2.95)

- Construct left turn lanes at the following eastbound locations:
- Lardin Way (PM 4.25)

- Ridgewood Road (PM 4.85)
- Granite Road (PM 7.19)
- Stag Drive (PM 7.49)
- Estates Drive (PM 7.77)

Construct scenic turnouts on Dollar Hill at PM 3.29 and PM 7.25

DESCRIPTION - RATIONALE - GENERAL COMMENTS

Segment 1 is an undivided two-lane conventional highway 7.6 miles in length extending from the SR 89 junction to Estates Drive in Tahoe Vista. The segment passes through the communities of Tahoe City and Carnelian Bay; within these communities, SR 28 consists of three travel lanes, one through lane in each direction with a continuous center turn lane.

Tahoe City is primarily a destination resort community. Recreational amenities include a golf course located northwest of the SR 89 junction, and a full service marina that provides boat mooring, boat rentals, boat storage, launching, and a fuel dock. Commons Beach is a four-acre park located in downtown Tahoe City, and on the outskirts of Tahoe City is Burton Creek State Park, which covers 2,000 acres of land and provides six miles of unpaved roadway for hiking and cross-country skiing.

Other North Shore parks and beaches located along Segment 1 include: Pomin Park (Lake Forest), Lake Forest Beach Park, Skylandia Park and Beach (Lake Forest), Patton Beach (Carnelian Bay), and Sandy Beach (Tahoe Vista). There is also a US Coast Guard Station in Tahoe City.

The Carnelian Bay Community Plan includes a “vision for transportation”. The SR 28 improvements in the plan call for “construction of trail like sidewalks, curbs, drainage system, conversion to parallel parking in the public right-of-way, landscaping, bike lanes, two travel lanes, and a center left-turn lane.”

A Caltrans Environmental Improvement Program (EIP) project from Tahoe State Park (PM 0.830) to SR 267 (PM 9.340) is currently being planned for Segment 1, and 1.64 miles of Segment 2. The primary purpose of the EIP project is to collect and treat storm water runoff from impervious surfaces within the State right-of-way, and to provide Class II bike lanes.

The draft EIP project report identifies the following projects for Segment 1.

- The existing SR 28 drainage system will be reconstructed by widening the shoulders and constructing curb, gutter, dike, slotted drains, drainage inlets, and culverts to convey the runoff to underground sand collection vaults, infiltration basins, and biofiltration swales for treatment. Maintenance pullouts will be constructed at sand collection vaults.
- Drainage outfalls will also be reconstructed to convey the additional runoff collected, where necessary.
- Erosion control measures will be incorporated on all other unvegetated slopes within the state right of way.
- Transit stops will be paved to prevent soil from being tracked onto the highway.
- Where a bike path does not currently exist, the shoulders will be striped as a Class II bike lane.

- Continuous, two-way left turn lanes will be constructed from Old Mill Road to Dollar Drive, from Sierra Terrace Road to Post Mile 1.10, and from Agate Road to Granite Road. Left turns from westbound SR 28 to Lakewood Lane will be prohibited.
- Left turn lanes will be constructed in westbound direction at Dollar Drive, and in the eastbound direction at Lardin Way, Ridgewood Road, Granite Road, Stag Drive, and Estates Drive.
- Intersection lighting will be upgraded throughout the project limits.
- Scenic turnouts will be provided on Dollar Hill at PM 3.29 and at PM 7.25.

The EIP projects concur with the transportation concept improvements for Segment 1.

LAND USE

Segment 1 land use designations are primarily tourist, recreational, and commercial. For specific land use designation information, the Placer County General Plan refers to the respective community plan for official County policy regarding proposed land uses. The respective community plans for Segment 1 are Tahoe City, Carnelian Bay, and the North Tahoe Community Plan.

The community plans use Plan Area Statements (PAS) as the governing land use regulatory mechanism for areas within the Placer County General Plan boundaries. The PAS are regulations for permitted land use activities under the Tahoe Regional Planning Agency's Regional Plan. For Segment 1, SR 28 has the following plan designations:

Tahoe City Community Plan: The land use classification for the Tahoe City PAS is commercial / public service. Existing uses in the plan area consists of commercial, condominiums, the State Park Campground, and Commons Beach. Tahoe City serves as the commercial center for the northwest portion of the Tahoe Region, and is one of the main entrances to the Tahoe Region.

Rocky Ridge PAS: This area is located along SR 28 between Tahoe City and Lake Forest. The land use is classified as residential. The planning statement is for the area to continue to be "residential of the same type and character that now exists."

Fish Hatchery PAS: This area extends from the shoreline near the U.S. Coast Guard facility to the County Administrative Center north of SR 28. The land use is classified as recreation. The planning statement is to "provide both dispersed and more intensive forms of recreation while preserving, to the extent possible, its natural character and value as a stream environment zone."

Lake Forest Glen PAS: This area is located along SR 28 between Tahoe City and Dollar Point. The land use is classified as residential, and the planning statement is to continue "as a medium density residential area with some additional compatible commercial uses."

Dollar Hill PAS: This is the commercial area at the SR 28 / Fabian Way intersection in the Dollar Point area. The land use classification is commercial / public service. The planning statement calls for the area to "continue to be a neighborhood oriented commercial area."

North Tahoe High School PAS: This area is in and around the high school in the Highlands area near Dollar Point. The land use is classified as recreation. The planning statement is to

continue to provide developed recreational facilities for the local residents”.

Cedar Flat PAS: This area is north of Dollar Point. The land use classification is residential, and the planning statement is for the area to continue “as a residential area of the same type and character now existing.”

Carnelian Bay Community Plan: The land use classification for the Carnelian Bay Plan Area is tourist. Existing uses in the plan area consists of offices, motels, marina, small retail shops, and restaurants. There are large undeveloped fill areas along Carnelian Creek. The Carnelian Bay planning statement indicates “this area should continue to serve the local commercial needs of both the tourist and residents of the area.”

Flick Point / Agate Bay PAS: This area is located between Carnelian Bay and Tahoe Vista. The land use classification is residential, and the planning statement is for the area to “continue to be residential, maintaining the existing character.”

Tahoe Estates PAS: This area is located on the west and north sides of the Tahoe Vista commercial area. The land use classification is residential, and the planning statement is for the area to “continue to be residential, maintaining the existing character.”

MODAL OPTIONS

Airport: The nearest general aviation airport is the Truckee-Tahoe Airport, located along SR 267 at the Placer / Nevada County border.

Bicycle: Currently there are Class I bike lanes to the west and east of Tahoe City, but there are no designated bicycle facilities connecting these segments through the commercial area. Bicyclists through the commercial core are forced to share the same right-of-way as the highway traffic, and the angled parking spaces. The Lake Tahoe Regional Bikeway Master Plan lists SR 28 as a proposed Class I from the SR 89 (PM 0.085) to Burton Creek State Park (PM 0.730), to tie into the existing Class I bike lane that runs from Burton Creek State Park to Lakewood Lane (PM 2.810). Currently, from Lakewood Lane east SR 28 is bike accessible; however, it is proposed as a Class II facility for the rest of SR 28 to the Nevada state line.

Public Transit – Tahoe Area Regional Transit (TART) system operates bus lines daily from Tahoe City to Incline Village, in Nevada. Hours of operation are daily from 6:30 AM to 6:30 PM.

Tahoe Trolley: During the summer only, Tahoe Trolley provides service along the northern and western shores of Lake Tahoe between Crystal Bay, Tahoe City, Squaw Valley, and Emerald Bay. Trolleys operate from 10:30 AM until 10:30 PM seven days per week.

RIGHT OF WAY

Existing total right-of-way widths for Segment 1 range from a minimum of 60 feet in Tahoe City, to a 100 – 200 foot section from approximately Sierra Terrace Road (PM 1.00) to Old County Road (PM 3.51). The remainder of the segment has 80-foot right-of-way width. Additional shoulder width may be necessary to accommodate both parking and Class II bike lanes.

Functional Classification Information

Functional Classification: **Minor Arterial**
National Highway System (NHS): **Non NHS**
Access Control: **Conventional Highway**
National Truck System: **Terminal Access Route**
Scenic Route: **Eligible**
Lifeline Route: **Non Lifeline**
Statewide Significance: **Interregional Route System**

Highway Log Right of Way Information

Number of Lanes 2

	<i>Meters</i>	<i>Feet</i>
Avg. Lane Width:	3.66	12.00
Avg. Shoulder Width:	1.22	4.00
Avg. Median Width:	0.00	0.00

General Comments:**Projects Planned (Non-funded)**

NO PROJECTS PLANNED

Projects Programmed (Funded)2002
SHOPP

Install Signals. In Tahoe City at
Grove Street.
Installation Year: 2008
Cost: \$232,000

2002
SHOPP

Rehab Pavement / Reconstruct
Drainage. In and near Tahoe City
from Tahoe State Park to SR 267.
Construction Year: 2009
Cost: 55,000,000

Traffic Data

Peak Period Direct Split: 56%
% Traffic Growth Per Year: 1%

Land-Use Data

Land Use Zone: Commercial, Public Service
Terrain: Rolling, Forest
Future-20yr. Land Use: Urban, Recreation, Commercial

Traffic Analysis (No Build)

Year	AADT	PkHrVol	V/CRatio	LOS	Comments
2003	18,362	2,082	0.86	E	
2013	20,987	2,379	0.99	F	
2023	23,611	2,677	1.12	F	

Collision Rates

Total Collision Rate: 1.28

Compares the actual segment collision rate with the statewide average rate on facilities of this type. Note: 1 equals the statewide average. Collision rate is expressed in million vehicle miles.

Fatal-plus-Injury
Collision Rate: 0.92

Compares the actual fatal-plus-injury rates with the statewide average rate on facilities of this type. Note: 1 equals the statewide average. Collision rate is expressed in million vehicle miles.

Note: Represents collision data from April 2000 to March 2003

Truck Volumes

	Daily Truck Volumes		% Trucks of Truck AADT	% Trucks of Total AADT
3 Axle	70	3 Axle	12.7%	0.4%
4 Axle	8	4 Axle	1.5%	0.0%
5+ Axle	40	5+ Axle	7.2%	0.2%
Total:	118	Total:	21.4%	0.6%

Air Quality

The following information is a brief overview only. For specific environmental information, contact California Department of Transportation District 3 Environmental Offices.

Air Basin: Lake Tahoe

Federal Air Quality Area Designations:

CO: Attainment-Maintenance
(CO Protocol Applies)

PM10: Unclassified/Attainment

Ozone: Attainment/1 hr. std. not
applicable

Local and Regional Planning Agencies

RTPA/MPO

Tahoe Regional Planning Agency (TRPA)
308 Darla Ct., Suite 103
Zephyr Cove, NV 89448-9702
(775) 588-4547

Air Quality District

Placer County Air Pollution Control District (DeWitt Center)
11464 "B" Ave.
Auburn, CA 95603-2603
(530) 889-7130

County Planning Department

County of Placer
Placer County Planning Department
11414 B Avenue
Auburn, CA 95603
(916) 889-7470

Congestion Management Agency

Placer County Transportation Planning Agency
249 Nevada Street
Auburn, CA 95603
(530) 823-4030

City Planning Department

No incorporated city governments along segment

District 3 - Transportation Concept Report Fact Sheet

Route Information

Route: 28
County: Placer
Segment Number: 2

Segment Boundaries

KP Start	12.392	PM Start	7.700
KP End	16.415	PM End	10.200
Distance [km]	4.023	Distance [mi]:	2.500

Segment Description

Estates Drive to Chipmunk Street

Concept Summary

Existing Facility:

4-lane conventional highway

Concept Facility:

3/4-lane conventional highway*

Ultimate Facility:

3/4-lane conventional highway*



Level of Service (LOS)

Existing LOS:	E	County General Plan:	Placer
20 yr. LOS - No Build:	F	General Plan Year:	1994
20 yr. Concept LOS:	F	General Plan LOS Standard:	D

Main Street Communities

Community Name:	General Plan Year:	General Plan LOS Standard:
Kings Beach	1994	D
-Unincorporated - Refer to county general plan for LOS standard		

TRANSPORTATION CONCEPT IMPROVEMENTS

Upgrade highway to Class II bike lane from Estates Drive to Chipmunk Street

Modify signal to include protected left turns at the SR 267/SR 28 intersection

Install traffic signal at National Avenue

Reduce from 4-lanes to 3-lane*

*A 3-lane conventional highway (one through lane in each direction and a two way left-turn lane) concept will be considered if the lane reduction can meet TRPA's LOS criteria for the Tahoe Region highway system.

DESCRIPTION - RATIONALE - GENERAL COMMENTS

Segment 2 is a four lane conventional highway 2.4 miles in length from Estates Drive to Chipmunk Street. The segment passes through the communities of Tahoe Vista and Kings Beach.

There are discussions of reducing the lanes for Segment 2 from four to three. This proposal is primarily a local community decision, but would need TRPA's support. The 1980 TRPA Compact states that "No project other than those to be reviewed and approved under the special provisions (d), (e), (f), and (g) may be developed in the region without obtaining the review and approval of the agency and no project may be approved unless it is found to comply with the regional plan and with the ordinances, rules and regulations enacted pursuant to a subdivision (a) to effectuate that plan (Article IV section b).

For a lane reduction to occur the highway would have to meet TRPA's LOS criteria for the Tahoe Region's highway system. The LOS standard is "D" on rural and urban developed area roads; however, LOS "E" may be acceptable during peak periods in urban areas, not to exceed four hours per day.

A lane reduction has both advantages and disadvantages. Research shows several advantages for converting from a four-lane undivided highway to a three-lane highway, such as a reduction in the total number of collisions (between a 17% and 62% reduction), improved pedestrian safety (pedestrians can focus on one lane at a time and the two-way-left-turn-lane (TWLTL) provides refuge if needed), traffic calming (due to a reduction in average speeds), improved emergency time (the TWLTL can be used as a lower-conflict access route), and conversions are relatively inexpensive (generally only restriping).

Disadvantages of a lane reduction include: increased travel delay for drivers, frequent stops and/or slow moving vehicles have a greater impact on traffic operations, increased delay at driveways (fewer gaps in the traffic stream), loss of passing opportunities, and cut-through traffic in residential neighborhoods.

The effect a lane reduction would have on SR 28 is debatable. Both Segment 1 and Segment 3 are two-lane conventional highways, so the benefit of a better LOS for the 2.4-mile section in Segment 2 is reduced. The decision for a lane reduction would come down to what is more important for the Kings Beach community: Does moving high volumes of traffic as quickly as possible outweigh the bike, pedestrian, and community benefits?

Placer County is in the process of conducting a critical flaw analysis on the final proposed alternatives for the Kings Beach Commercial Core Improvement Project. The County does not want to fully review any alternative that is not feasible with any of the approving agencies (Caltrans, FHWA, TRPA, and Placer County).

Members of the Kings Beach community believe a 3-lane facility is much more in context with the surrounding environment, favorable to pedestrian activity, and consistent with other 2-lane roadways around the lake. However, as mentioned above, a lane reduction would require TRPA's approval since preliminary traffic analysis indicates the roadway segments will not meet TRPA's LOS criteria.

Currently there are two projects proposed that cover the entire length of Segment 2. The first project is a continuation of the Caltrans EIP project that begins in Segment 1, and ends at the SR 267 / SR 28 intersection. The second project is Placer County's Kings Beach Commercial

Core Improvement Project.

The draft SR 28 EIP project report identified the following transportation issues for Segment 2:

- *Motorists along SR 28 in the two-lane sections currently experience delays when a vehicle is waiting in the traveled way to turn left

- *The intersection of SR 267 / SR 28 currently does not provide adequate turning width for commercial and emergency vehicles

- *Several county road intersections do not provide adequate sight distance and width

- *Existing lighting along SR 28 lacks consistency and does not meet current Caltrans and community plan standards

- *There are sections of nonstandard shoulder width

As a result of these issues, the SR 28 EIP project proposes all of the projects described in Segment 1, and the following three alternatives all within Segment 2:

Alternative 1A

In addition to the scope described in Segment 1, Alternative 1A would retain the existing lane configuration (two through lanes in each direction) from Estates Drive to Beach Street. On-street parking would be prohibited due to the addition of Class II bike lanes.

Alternative 1B

In addition to the scope described in Segment 1, Alternative 1B would provide two eastbound lanes, one westbound lane, and a two-way left turn lane from National Avenue to Beach Street. On-street parking would be prohibited due to the addition of Class II bike lanes.

Alternative 2

In addition to the scope described in Segment 1, Alternative 2 would provide one through lane in each direction and a two-way left turn lane from Estates Drive to Beach Street. On-street parking would remain and Class II bike lanes would be added.

A second project being planned in Segment 2 is the Kings Beach Commercial Core Improvement project by the Placer County Department of Public Works, in coordination with Caltrans District 3, and the Kings Beach Community. This project continues from where the Caltrans EIP project ends at the junction of SR 267 (PM 9.34).

The Kings Beach Commercial Core Improvement project proposes to construct modifications on SR 28 in the community of Kings Beach between State Route 267 (PM 9.340) and Chipmunk Street (PM 10.215). In accordance with the Kings Beach Community Plan (April 1996) and the Tahoe Regional Planning Agency's Environmental Improvement Program (November 2001), the proposed project consists of four integrated elements:

- *Modification of the roadway (including bike lane provisions);

- *Construction of pedestrian enhancements (including sidewalks, crossings, landscaping and aesthetic improvements);

- *Construction of storm drainage and water quality improvements; and

*Development of safe and uniform parking (including off street parking lots to maintain the existing number of spaces)

According to the project description, “the intent is to provide these upgrades to enhance the roadway and commercial core area while emphasizing and reinforcing the friendly, rustic ‘small town in the Sierras’ feel of Kings Beach”.

The existing four-lane roadway is in need of rehabilitation. The Kings Beach project will also rehabilitate the road to current standards including the construction of curb and gutter. In addition, the feasibility of the following five roadway alternatives is being considered:

*Project Alternative One (No Build): No improvements will be constructed; the existing conditions will remain.

*Project Alternative Two (Three Lanes with Roundabouts): The roadway would include three lanes, one in each direction, with a center two-way left turn lane. Roundabouts would be constructed at the intersections of SR 28 at Bear, Coon, and Fox Streets. The signal at Coon Street would be removed, but the signal at SR 267 would remain. Bike lanes and on-street parallel parking would be provided.

*Project Alternative Three (Four Lanes with Parking, Two New Signals, Bikeways): The roadway would include four lanes, two in each direction. Traffic signals will be constructed at Bear and Fox Streets. Left turn pockets would be constructed at all signalized intersections. A 12-ft wide striped shoulder area would accommodate bicycle travel and parallel parking by automobiles.

*Project Alternative Four (Four Lanes with Parking, Two New Signals, Striped Bike Lanes): The roadway would include four lanes, two in each direction. Traffic signals will be constructed at Bear and Fox Streets. Left turn pockets would be constructed at all signalized intersections. A 14-ft wide striped shoulder area would accommodate dedicated bicycle lanes and parallel parking by automobiles.

*Project Alternative Five (Four Lanes with Parking, One New Signal, Bikeways): The roadway would include four lanes, two in each direction. A traffic signal will be constructed at Bear Street. Left turn pockets would be constructed at all signalized intersections. A 12-ft wide striped shoulder area would accommodate bicycle travel and parallel parking by automobiles.

*Project Alternative Six (Four Lanes with Parking, One New Signal, Striped Bike Lanes): The roadway would include four lanes, two in each direction. A traffic signal will be constructed at Bear Street. Left turn pockets would be constructed at all signalized intersections. A 14-ft wide striped shoulder area would accommodate dedicated bicycle lanes and parallel parking by automobiles.

LAND USE

The community plans use Plan Area Statements (PAS) as the governing land use regulatory mechanism for areas within the Placer County General Plan boundaries. The PAS are regulations for permitted land use activities under the Tahoe Regional Planning Agency's Regional Plan. For Segment 2, SR 28 has the following plan designations:

Tahoe Vista Community Plan: The land use classification for the Tahoe Vista plan area is tourist. As a result, most of the commercial uses along SR 28 are tourist oriented (motels,

restaurants, and marinas). The planning statement says “Tahoe Vista should be redeveloped to continue to serve commercial needs of the residents and tourists of the north shore.”

The plan’s “vision for transportation” states that SR 28 in Tahoe Vista will be improved to include four lanes (two lanes in each direction with no center turn lane), Class II bikeways on each side, crosswalks, and sidewalks. In addition, the vision states that construction of highway improvements will be in conjunction with the construction of sidewalks, curbs, drainage system, landscaping, utility under grounding, and lighting.

Woodvista PAS: This area is located around the Brockway golf course between Tahoe Vista and Kings Beach. The land use is classified as residential. The planning statement for Woodvista provides that “this area should continue to be residential, maintaining the existing character of the neighborhood.”

Kings Beach Community Plan: The land use classification for the Kings Beach section along SR 28 is commercial / public service. Existing uses are a mixture of commercial, recreation, and residential. Shorezone uses include motels, condominiums, single-family dwelling units, and public and private recreation.

The Community Plan provides the following land use planning statement: "This area should continue to serve the regional tourist and commercial needs of the north shore. The area should be redeveloped to concentrate use, restore stream environment zones, and increase shore zone access. The overall planning goal is to provide an attractive destination resort community."

As a result, land use in Segment 2 is predominantly tourist, recreational, and commercial. There are a large number of motels, restaurants, and tourist related retail shops. Tahoe Vista as well as Kings Beach, contains recreational facilities such as public beaches, recreation concessions, marinas, and various water sports. Recreational activities occur in all seasons such as skiing, boating, swimming, golfing, horseback riding, biking, fishing, and sight-seeing. There is also a 9-hole golf course in Kings Beach.

MODAL OPTIONS

Airport: The nearest general aviation airport is the Truckee-Tahoe Airport, located along SR 267 at the Placer / Nevada County border.

Bicycle: SR 28 is currently bike accessible in Segment 2; however, the Lake Tahoe Regional Bikeway Master Plan and the EIP project propose SR 28 include a Class II bike lane.

Public Transit – Tahoe Area Regional Transit (TART) system operates bus lines daily from Tahoe City to Incline Village, in Nevada. Hours of operation are daily from 6:30 AM to 6:30 PM.

Tahoe Trolley: During the summer only, Tahoe Trolley provides service along the northern and western shores of Lake Tahoe between Crystal Bay, Tahoe City, Squaw Valley, and Emerald Bay. Trolleys operate from 10:30 AM until 10:30 PM seven days per week.

Truckee Trolley: During the winter only, Truckee Trolley provides service through Kings Beach on their C Route between Tahoe Sands Resort and Northstar Village. Hours of operation are daily from 7:00 AM and 6:00 PM.

RIGHT OF WAY

Existing right of way widths for this segment are 80 feet throughout. Additional shoulder width may be necessary to accommodate both parking and Class II bike lanes.

Functional Classification Information		Highway Log Right of Way Information		
Functional Classification:	Minor Arterial	Number of Lanes 4		
National Highway System (NHS):	Non NHS			
Access Control:	Conventional Highway		Meters	Feet
National Truck System:	Terminal Access Route	Avg. Lane Width:	3.66	12.00
Scenic Route:	Eligible	Avg. Shoulder Width:	1.22	4.00
Lifeline Route:	Non Lifeline	Avg. Median Width:	0.00	0.00
Statewide Significance:	Interregional Route System	<u>General Comments:</u>		

Projects Planned (Non-funded)

NO PROJECTS PLANNED

Projects Programmed (Funded)

2002
SHOPP

Install signal in Tahoe Vista at National Avenue.
Installation Year: 2006
Cost: 328,000

2002
STIP

Install curb, gutters, sidewalk, signal, and drainage. In Kings Beach from SR 267 to Chipmunk Street (PM 9.2 / PM 10.3).
Construction Year: 2008
Capital Cost: \$24,000,000

Traffic Data

Peak Period Direct Split: 53%
% Traffic Growth Per Year: 1%

Land-Use Data

Land Use Zone: Urban, Recreation, Commercial
Terrain: Level, Forest
Future-20yr. Land Use: Urban, Recreation, Commercial

Traffic Analysis (No Build)

Year	AADT	PkHrVol	V/CRatio	LOS	Comments
2003	19,377	2,283	0.95	E	
2013	22,146	2,609	1.08	F	
2023	24,916	2,935	1.22	F	

Collision Rates

Total Collision Rate: 2.07

Compares the actual segment collision rate with the statewide average rate on facilities of this type. Note: 1 equals the statewide average. Collision rate is expressed in million vehicle miles.

Fatal-plus-Injury

Collision Rate: 1.59

Compares the actual fatal-plus-injury rates with the statewide average rate on facilities of this type. Note: 1 equals the statewide average. Collision rate is expressed in million vehicle miles.

Note: Represents collision data from April 2000 to March 2003

Truck Volumes

	Daily Truck Volumes		% Trucks of Truck AADT	% Trucks of Total AADT
3 Axle	83	3 Axle	14.3%	0.4%
4 Axle	12	4 Axle	2.1%	0.1%
5+ Axle	70	5+ Axle	12.0%	0.4%
Total:	165	Total:	28.4%	0.9%

Air Quality

The following information is a brief overview only. For specific environmental information, contact California Department of Transportation District 3 Environmental Offices.

Air Basin: Lake Tahoe

Federal Air Quality Area Designations:

CO: Attainment-Maintenance
(CO Protocol Applies)

PM10: Unclassified/Attainment

Ozone: Attainment/1 hr. std. not
applicable

Local and Regional Planning Agencies

RTPA/MPO

Tahoe Regional Planning Agency (TRPA)
308 Darla Ct., Suite 103
Zephyr Cove, NV 89448-9702
(775) 588-4547

Air Quality District

Placer County Air Pollution Control District (DeWitt Center)
11464 "B" Ave.
Auburn, CA 95603-2603
(530) 889-7130

County Planning Department

County of Placer
Placer County Planning Department
11414 B Avenue
Auburn, CA 95603
(916) 889-7470

Congestion Management Agency

Placer County Transportation Planning Agency
249 Nevada Street
Auburn, CA 95603
(530) 823-4030

City Planning Department

No incorporated city governments along segment

District 3 - Transportation Concept Report Fact Sheet

Route Information

Route: 28
County: Placer
Segment Number: 3

Segment Boundaries

KP Start	16.415	PM Start	10.200
KP End	17.748	PM End	11.028
Distance [km]	1.333	Distance [mi]:	0.828

Segment Description

Chipmunk Street to California/Nevada State Line

Concept Summary

Existing Facility:

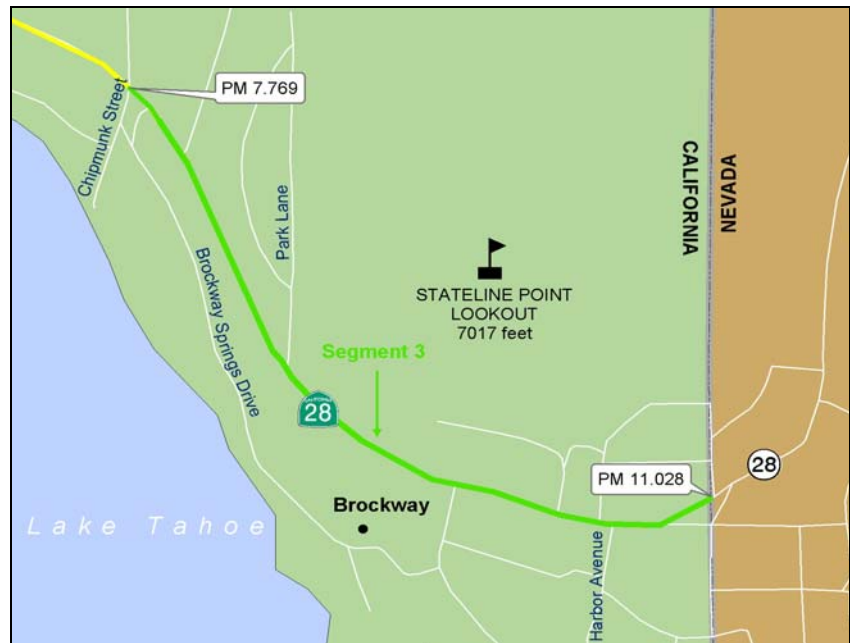
2-lane conventional highway

Concept Facility:

2-lane conventional highway

Ultimate Facility:

2-lane conventional highway



Level of Service (LOS)

Existing LOS:	F	County General Plan:	Placer
20 yr. LOS - No Build:	F	General Plan Year:	1994
20 yr. Concept LOS:	F	General Plan LOS Standard:	D

Main Street Communities

Community Name:	General Plan Year:	General Plan LOS Standard:
Kings Beach	1994	D
-Unincorporated - Refer to county general plan for LOS standard		

TRANSPORTATION CONCEPT IMPROVEMENTS

Upgrade highway to Class II bike lane from Chipmunk Street to Nevada State Line

Install Changeable Message Sign (CMS) westbound at Harbor Avenue (PM 10.93)

DESCRIPTION - RATIONALE - GENERAL COMMENTS

Segment 3 is an undivided two-lane conventional highway 0.8 miles in length. The segment begins at Chipmunk Street and ends at the Nevada state line. Land use along this segment of the route is primarily residential.

As drivers leave Kings Beach and enter Brockway there is 7.0% uphill grade. North of Brockway is the Stateline Fire Lookout Point. This facility straddling the California/Nevada

border is the best high-elevation vantage point (7,017 feet) on Lake Tahoe's north shore, and a destination for snowshoe excursions in winter. The lookout also has a self-guided interpretive trail with detailed signposts explaining the human and natural history of the area.

SR 28 also links Kings Beach to Incline Village, Nevada. On the Nevada side, SR 28 is the only route available for automobile travel between Crystal Bay and Incline Village. Highway traffic in Segment 3 is a combination of vehicles traveling through the segment (through traffic) and vehicles having a destination within the segment (local traffic). Just past the state line are casinos, with hotel/motel and commercial uses, as well as single-family homes.

Pedestrian facilities in Segment 3 are few. Pedestrians share the same right-of-way as vehicles, including walking to the public beaches in Kings Beach and the casinos across the state line. A potential project would be to construct sidewalks from Chipmunk Street to the state line. The route concept improvement is to upgrade the highway with Class II bike lanes for the entire segment, and to provide a changeable message sign westbound at Harbor Avenue.

LAND USE

The community plans use Plan Area Statements (PAS) as the governing land use regulatory mechanism for areas within the Placer County General Plan boundaries. The PAS are regulations for permitted land use activities under the Tahoe Regional Planning Agency's Regional Plan. For Segment 3, SR 28 has the following plan designations:

Brockway PAS: This area is the residential area along SR 28 between Kings Beach and North Stateline. The land use classification is residential, and the existing uses are a mix of condominiums and single-family dwelling units. The shoreline is in private ownership. The planning statement for Brockway states, "this area should continue to be residential, maintaining the existing character of the neighborhood."

North Stateline Community Plan: This small section of SR 28, on the California side between Harbor Avenue and Stateline, has the land use designation as tourist.

MODAL OPTIONS

Airport: The nearest general aviation airport is the Truckee-Tahoe Airport, located along SR 267 at the Placer / Nevada County border.

Bicycle: SR 28 is currently bike accessible in Segment 3; however, the Lake Tahoe Regional Bikeway Master Plan, and the EIP project propose SR 28 be a Class II bike lane.

Public Transit – Tahoe Area Regional Transit (TART) system operates bus lines daily from Tahoe City to Incline Village, in Nevada. Hours of operation are daily from 6:30 AM to 6:30 PM.

Tahoe Trolley: During the summer only, Tahoe Trolley provides service along the northern and western shores of Lake Tahoe between Crystal Bay, Tahoe City, Squaw Valley, and Emerald Bay. Trolleys operate from 10:30 AM until 10:30 PM seven days per week.

Truckee Trolley: During the winter only, Truckee Trolley provides service through Kings Beach on their C Route between Tahoe Sands Resort and Northstar Village. Hours of operation are daily from 7:00 AM and 6:00 PM.

RIGHT OF WAY

Existing right of way widths average 80 feet for the segment, except near Park Lane (PM 10.56) where there is a 170-foot section. Additional shoulder width may be necessary to accommodate both parking and Class II bike lanes.

Functional Classification Information

Functional Classification: **Minor Arterial**
National Highway System (NHS): **Non NHS**
Access Control: **Conventional Highway**
National Truck System: **Terminal Access Route**
Scenic Route: **Eligible**
Lifeline Route: **Non Lifeline**
Statewide Significance: **Interregional Route System**

Highway Log Right of Way Information

Number of Lanes 2

	<i>Meters</i>	<i>Feet</i>
Avg. Lane Width:	3.66	12.00
Avg. Shoulder Width:	2.44	8.00
Avg. Median Width:	0.00	0.00

General Comments:

Projects Planned (Non-funded)

NO PROJECTS PLANNED

Projects Programmed (Funded)

2002
SHOPP

Water Quality Improvements. In Kings Beach, from Beaver Street to Nevada State Line (PM 10.2 / PM 11.0).
Construction Year: 2007
Total Cost: \$4,000,000

Traffic Data

Peak Period Direct Split: 52%
% Traffic Growth Per Year: 1%

Land-Use Data

Land Use Zone: Urban, Recreation, Commercial
Terrain: Mountainous
Future-20yr. Land Use: Urban, Recreation, Commercial

Traffic Analysis (No Build)

Year	AADT	PkHrVol	V/CRatio	LOS	Comments
2003	15,282	2,429	1.10	F	
2013	17,094	2,717	1.12	F	
2023	18,906	3,005	1.21	F	

Collision Rates

Total Collision Rate: 0.63

Compares the actual segment collision rate with the statewide average rate on facilities of this type. Note: 1 equals the statewide average. Collision rate is expressed in million vehicle miles.

Fatal-plus-Injury

Collision Rate: 0.63

Compares the actual fatal-plus-injury rates with the statewide average rate on facilities of this type. Note: 1 equals the statewide average. Collision rate is expressed in million vehicle miles.

Note: Represents collision data from April 2000 to March 2003

Truck Volumes

	Daily Truck Volumes		% Trucks of Truck AADT	% Trucks of Total AADT
3 Axle	59	3 Axle	12.8%	0.4%
4 Axle	6	4 Axle	1.4%	0.0%
5+ Axle	33	5+ Axle	7.2%	0.2%
Total:	98	Total:	21.4%	0.6%

Air Quality

The following information is a brief overview only. For specific environmental information, contact California Department of Transportation District 3 Environmental Offices.

Air Basin: Lake Tahoe

Federal Air Quality Area Designations:

CO: Attainment-Maintenance
(CO Protocol Applies)

PM10: Unclassified/Attainment

Ozone: Attainment/1 hr. std. not
applicable

Local and Regional Planning Agencies

RTPA/MPO

Tahoe Regional Planning Agency (TRPA)
308 Darla Ct., Suite 103
Zephyr Cove, NV 89448-9702
(775) 588-4547

Air Quality District

Placer County Air Pollution Control District (DeWitt Center)
11464 "B" Ave.
Auburn, CA 95603-2603
(530) 889-7130

County Planning Department

County of Placer
Placer County Planning Department
11414 B Avenue
Auburn, CA 95603
(916) 889-7470

Congestion Management Agency

Placer County Transportation Planning Agency
249 Nevada Street
Auburn, CA 95603
(530) 823-4030

City Planning Department

No incorporated city governments along segment

Appendix A: Current Design Standards

From Highway Design Manual, November 1, 2001

Paved Shoulder Width

<i>Roadway Type (Multilane Undivided)</i>	Left	Right
<i>Conventional Highway –</i>	--	2.4 meters (approx. 8 ft)
<i>Freeway and Expressway</i>	--	3.0m (approx. 10ft)

Traveled Way Width

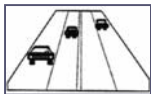
<i>Conventional Highways, Freeways, Expressways (Multilane Undivided)</i>
3.6 meters (approx. 12 feet)

Bicycle Facilities

	Minimum Width of Traveled Way	Minimum Horizontal Clearance to Obstructions	Minimum Vertical Clearance to Obstructions
Class I Bikeway (One-way)	1.5 meters (approx. 5 feet)	0.6 meters (approx. 2 feet)	2.5 meters (approx. 8 feet)
Class I Bikeway (Two-way)	2.4 meters (approx. 8 feet)	0.6 meters (approx. 2 feet)	2.5 meters (approx. 8 feet)
Class II Bikeway (parking permitted with striped parking or stall)	1.5 meters (approx. 5 feet)	--	--
Class II Bikeway (parking permitted without parking stripe or stall)	3.3 meters (approx. 11 feet)	--	--
Class II Bikeway (parking prohibited)	1.5 meters (approx. 5 feet)	--	--
Class III Bikeway	* Note	--	--

** Note: Minimum width is dependent on many factors, including the volume and character of vehicular traffic on the road, typical speeds, vertical and horizontal alignment, sight distance, and parking conditions. Recommend that minimum widths be standard shoulder width (2.4 meters [approximately 8 feet]).*

Appendix B: Level of Service Definitions



LOS A – Free Flowing Conditions.



LOS B – Speeds at or near free-flow speed, but presence of other users begins to be noticeable.



LOS C – Speeds at or near free-flow speed, but freedom to maneuver is noticeably restricted.



LOS D – Conditions where speeds begin to decline slightly with increasing flow; Freedom to maneuver more restricted.



LOS E – Operating conditions at or near roadway capacity. Even minor disruptions to the traffic stream can cause delay.



LOS F – Breakdown in vehicle flow. Queues form quickly behind point in the roadway where the arrival flow rate temporarily exceeds the departure rate.

California Natural Diversities Database

The California Natural Diversity Database (CNDDDB) is a statewide inventory of the locations and condition of the state's biological resources, rare species, and natural communities. The CNDDDB was used in this report to provide an initial assessment of the known biological resources in regards to State Route 28 in District 3. Impacts to biological resources affect both the feasibility of a project and the identification of alternatives. This information does not represent all possible environmental constraints that may exist.

Other environmental issues include air quality, cultural resources (historic and prehistoric), floodplain encroachment, hazardous materials, noise, visual impacts, and the cumulative impacts of regional projects. Any project that is being considered for programming would require an environmental document in compliance with all State, Federal, and Local environmental laws and regulations.

Table 2 – SR 28 Special Status Species (Common Names)

<i>ANIMAL</i>	<i>PLANT</i>
American Marten	Plumas Ivesia
Lahontan Cutthroat Trout	Slender-leaved Pondweed
Lake Tahoe Benthic Stonefly	Tahoe Yellow Cress
Sierra Nevada Mountain Beaver	
Yellow Warbler	

Appendix C – California Natural Diversities Database



Appendix D: Federal & State Environmental and Resource Agencies

Federal Agencies

US Army Corps of Engineers – Sacramento District

1325 J Street
Sacramento, CA 95814-2922
(916) 557-5100

USDA Natural Resources Conservation Service – Grass Valley

113 Presley Way, Suite 1
Grass Valley, CA 95945-5846
(530) 272-3417
(530) 477-8055 (fax)

USDA Natural Resources Conservation Service – Auburn Service Center

251 Auburn Ravine Road, Suite 106
Auburn, CA 95603-3719
(530) 885-6505
(530) 823-5504 (fax)

US Fish and Wildlife Service – Pacific (Region 1)

Sacramento Fish and Wildlife Office Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

US Environmental Protection Agency – Region 9

75 Hawthorne Street
San Francisco, CA, 94105

National Marine Fisheries Service – Sacramento Area Office

650 Capitol Mall, Suite 8-300
Sacramento, CA 95814-4708
(916) 930-3600
(916) 930-3629 (fax)

State Agencies

California Department of Fish and Game

Sacramento Valley – Central Sierra Region
1701 Nimbus Road
Rancho Cordova, CA 95670
(916) 358-2900

Regional Water Quality Control Board

Central Valley Region – Sacramento Office (5S)
3443 Routier Road
Sacramento, CA 95827-3098
(916) 255-3000
(916) 255-3015 (fax)

Appendix E: Glossary and Acronyms

Acronyms and Terms taken from the "Caltrans Acronyms & Transportation Terms Commonly Used in System and Advanced Planning"

Aa

Access Control: The condition where the right of owners or occupants of abutting land or other persons to access a highway is fully or partially controlled by public authority.

Air Basin: An area or territory that contains similar meteorological and geographical conditions. In California, the Air Resources Board (ARB) has established nine air basins.

Annual Average Daily Traffic (AADT): The average 24-hour traffic volume, which is the total number of vehicles during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year.

Average Daily Traffic (ADT): The average 24-hour traffic volume, which is the total number of vehicles during a stated period divided by the number of hours in that period. Unless otherwise stated, the period is a 24-hour period.

Bb

Bypass: An arterial highway that permits traffic to avoid part or all of an urban area.

Cc

Capacity Enhancement: Projects that increase the carrying capacity of a route such as additional lanes, or operational improvements such as ramp metering.

Changeable Message Signs (CMS): Electronic signs that can change the message it displays. Often used on highways to warn and redirect traffic. Also referred to as variable or electronic message signs.

Channelization: The separation or regulation of conflicting traffic movements into definite paths or travel by the use of pavement markings, raised islands or other suitable means to facilitate the safe and orderly movement of both vehicles and pedestrians.

Class I Facility or Bikeway: Class I bikeways (bike paths) are facilities with exclusive right of way, with cross flows by motorists minimized. Section 890.4 of

the Streets and Highways Code describes Class I bikeways as serving "the exclusive use of bicycles and pedestrians".

Class II Facility or Bikeway: Class II bikeways (bike lanes) for preferential use by bicycles are established within the paved area of highways. Bike lane stripes are intended to promote an orderly flow of traffic, by establishing specific lines of demarcation between areas reserved for bicycles and lanes to be occupied by motor vehicles.

Class III Facility or Bikeway: Class III bikeways (bike routes) are intended to provide continuity to the bikeway system. Bike routes are established along through routes not served by Class I or II bikeways, or to connect discontinuous segments of bikeway (normally bike lanes). Class III facilities are shared facilities, either with motor vehicles on the street, or with pedestrians on sidewalks, and in either case bicycle usage is secondary. Class III facilities are established by placing Bike Route signs along roadways.

Closed Circuit Television (CCTV): This ITS technology allows a camera to display remote verification of road and weather conditions, traffic conditions and incidents. This CCTV camera will have compatibility with other communication technologies, such as, cable TV, kiosks and the Internet.

Concept: A strategy for future improvements that will reduce congestion, improve mobility, or maintain the existing level or service on a specific route.

Conformity: Process to assess the compliance of any Federally funded or approved transportation plan, program, or project with air quality implementation plans. The Clean Air Act defines the conformity process.

Conventional Highway: A highway without control of access, and which may or may not be divided. Grade separations at intersections or access control may be used when justified at spot locations.

Ee

Expressway: An arterial highway with at least partial control of access, which may or may not be divided or have grade separations at intersections.

Ff

Focus Routes: A subset of the 34 High Emphasis Routes (see definition). The focus routes represent 10 IRRS corridors that should be of the highest priority for completion to minimum facility standards in a 20-year period.

Functional Classification: Guided by Federal legislation, refers to a process by which streets and highways are grouped into classes or systems, according to the character of the service that is provided, i.e., Principal Arterials, Minor Arterials and Major Collectors).

Gg

Gap: The time, in seconds, for the front bumper of the second of two successive vehicles to reach the starting point of the front bumper of the first.

Geometric Design: Geometric design is the arrangement of the visible elements of a road, such as alignment, grades, sight distances, widths, slopes, etc.

Goods Movement: The general term referring to the flow of commodities, modal goods movement systems and goods movement institutions.

Grade Separation: A crossing of two highways or a highway and a railroad at different levels.

Hh

High Emphasis Routes: Routes that are characterized as being the most significant Interregional Road System (IRRS) routes. More importantly, these routes are significant in interregional travel and to maintaining and improving mobility across the entire state.

Highway Adoption: California Transportation Commission (CTC) establishment of a specific highway route location.

Highway Advisory Radio (HAR): An ITS technology that provides valuable information to travelers through prerecorded messages that contain traffic information, road conditions, chain requirements and road closures, etc. Transmission is generally accomplished through low-powered AM broadcast.

li

Intelligent Transportation Systems (ITS): Use of advanced sensor, computer, and electronic systems to increase the safety and efficiency of the transportation system.

Interregional Road System (IRRS): A series of interregional state highway routes, outside the urbanized areas, that provides access to, and links between, the State's economic centers, major recreational areas, and urban and rural regions.

IRRS: Interregional Road System

Kk

KPM: Kilometer Post-mile

Kilometer Post-mile (KPM): Using kilometers and counties, the Postmile system identifies specific and unique locations in the California highway system.

LI

Level-of-Service (LOS): A rating using performance measures (e.g., traffic volumes, vehicle/capacity ratios, vehicle delay times), that characterizes operational conditions within a traffic stream and perception of those measures by motorists and passengers.

Lifeline Route: A route on the State Highway System that is deemed so critical to emergency response/life safety activities of a region or the state. It must remain open immediately following a major earthquake, or for which preplanning for detour and/or expeditious repair and reopening can guarantee the through movement of emergency equipment and supplies.

LOS: Level-of-Service

Mm

Median: The portion of a divided highway separating the traveled ways for traffic in opposite directions.

Nn

National Highway System (NHS): The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 included the Interstate Highway System in the 155,000-mile National Highway System (NHS). The NHS approved by Congress in 1995, provides an interconnected system of principal arterial routes to serve major travel destinations and population centers, international border crossings, as well as ports, airports, public transportation facilities, and other intermodal transportation facilities. NHS routes must also meet national defense requirements and serve interstate and interregional travel.

NHS: National Highway System

Pp

Paratransit: A variety of small, often flexibly-schedule and route transportation services using low-capacity vehicles, such as vans, to operate within normal urban transit corridor or rural areas. These services usually serve the needs of persons that standard mass transit services would serve with difficulty, or not at all. Often, the patrons include the elderly and persons with disabilities.

Peak Period: The period during which the maximum amount of travel occurs. It may be specified as the morning (AM) or afternoon (PM) peak, or peak hours.

Plan Area Statements (PAS): Regulations for permitted land use activities under the Tahoe Regional Agency's Regional Plan.

PM: Post-mile

Post-Mile (PM): Using miles and counties, the post-mile (PM) system identifies specific and unique locations in the California highway system.

Rr

Regional Transportation Plan (RTP): State mandated documents to be developed biennially by all Regional Transportation Planning Agencies (RTPAs). They consist of policy, action, and financial elements.

Regional Transportation Planning Agency (RTPA): Created by AB 69 (1972) to prepare regional transportation plans and designated by the Business,

Transportation and Housing secretary to receive and allocate transportation funds. RTPAs can be Councils of Government (COGs), Local Transportation Commissions (LTCs), Metropolitan Planning Organizations (MPOs), or statutorily created agencies.

Relinquishment: A transfer of the State's right, title, and interest in and to a highway, or portion thereof, to a city or county.

Right-of-Way: Real estate acquired for transportation purposes, which includes the facility itself (highway, fixed guideway, etc.) as well as associated uses (maintenance structures, drainage systems, roadside landscaping, etc.)

Route Concept: The Department's judgment on existing and future facilities given present and future financial, environmental, planning and engineering factors.

RTP: Regional Transportation Plan

Rural Area: An area with a population of less than 2,500, and located outside the U.S. Census *urban area* boundary.

Ss

SACOG: Sacramento Area Council of Governments

Scenic Highway: An officially designated portion of the State Highway System traversing areas of outstanding scenic beauty and/or historic character. Designations include: All-American Road, National Scenic Byway, U.S. Forest Service Byway, Historic Highway and State Scenic Highway.

Shared Roadway: Shared Roadways have no bikeway designation. For example, many rural highways are used for intercity touring and recreational travel. However, the limited use and lack of continuity makes it inappropriate to designate these facilities for bikeways. The development and maintenance of a 4 foot-paved roadway shoulder with a 4-inch stripe can improve the safety and convenience of motorists and bicyclists.

SHOPP: State Highway Operation and Protection Program

Shoulder: The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of base surface courses.

SR: State Route

State Highway Operation and Protection Program (SHOPP): A 4-year program limited to projects related to state highway safety, maintenance, and operation.

State Route (SR): State highways within the State, other than Interstate and US routes, which serve intrastate and interstate travel. These highways can be freeways, expressways, or conventional highways.

State Transportation Improvement Program (STIP): Biennial document, adopted by the California Transportation Commission (CTC), which provides the schedule of projects for develop over the upcoming five years.

Tt

TCR: Transportation Concept Report

TDM: Transportation Demand Management

Transit: Generally refers to passenger service provided to the general public along established routes with fixed or variable schedules at published fares.

Transportation Concept Report (TCR): Also known as a Route Concept Report (RCR), a document that identifies current operating conditions, future deficiencies, a Route Concept and Concept Level of Service, and improvements to the route or corridor that will achieve the concept.

Transportation Demand Management (TDM): Demand-based techniques for reducing traffic congestion, such as ridesharing programs and flexible work schedules that enable employees to commute to and from work outside of peak travel periods.

Transportation Management Center (TMC): A focal point that can monitor traffic and road conditions, as well as train and transit schedules, and airports and shipping advisories. From here, information about accidents, road closures and emergency notification is relayed to travelers.

Transportation System Management (TSM): TSM is 1) a process oriented approach to solving transportation problems considering both long and short range implications; and 2) a services and operations process oriented in which low capital, environmentally-responsive, efficiency-maximizing improvements are implemented on existing facilities.

Uu

Urban Area: An area with a population of 2,500 to 49,999, and not located within U.S. Census *urbanized area* boundaries.

Urbanized Area: An area with a U.S. Census population of 50,000 or more, and includes *urban area* boundaries.

Appendix F: References

1. California State Rail Plan 2001-02 to 2010-11. California Department of Transportation. January 2002.
2. The Conversion of Four-Lane Undivided Urban Roadways to Three-Lane Facilities. TRB Urban Street Symposium Number E-C019. December 2000.
3. Draft Project Study Report: On SR 28 In the Community of Kings Beach. May 2001.
4. Environmental Improvement Program for the Lake Tahoe Region. February 1998.
5. Federal Transportation Plan / Regional Transportation Plan for the Lake Tahoe Region. August 2001.
6. Lake Tahoe Basin Environmental Improvement Program PSR. California Department of Transportation. December 2003.
7. Lake Tahoe Regional Bicycle and Pedestrian Master Plan. May 2003.
8. North Tahoe Community Plan. April 1996.
9. Placer County General Plan. August 1994.
10. Placer County Regional Bikeway Plan. September 2002.
11. Placer County Regional Transportation Plan 2022. December 2001.
12. Placer EIP. Draft Traffic Operational Analysis Report. California Department of Transportation. February 2004.
13. Tahoe Area Intelligent Transportation System Project Study Report. California Department of Transportation. October 2001.
14. Tahoe Basin ITS Strategic Plan. January 2003.
15. Tahoe City Community Plan. February 1994.